

REMARKS

Claims 1, 3, 7, and 8 remain in the application and have been amended hereby, with claim 2 having been cancelled, without prejudice or disclaimer.

Reconsideration is respectfully requested of the objection to the drawings.

The structure recited in the claims is provided by the measuring systems as shown in Figs. 1 and 3, for example, in which the measuring means is shown and the correction value calculating means and the correcting means are shown as embodied by the microcomputer 17 that includes the memory 17a that stores the remaining capacity value of the battery. In addition, as shown in Fig. 3, the timer is provided for determining the predetermined time as recited in the claims.

Accordingly, it is respectfully submitted that by reason of the microcomputer including the memory and timer attached thereto that all positively recited elements in the claims are shown in the drawings.

Reconsideration is respectfully requested of the rejection of claims 7 and 8 under 35 USC 112, second paragraph, as being indefinite.

Claims 7 and 8 have been amended hereby taking into account the examiner's comments that the operation of the microcomputer, as previously recited, was confusing.

Claims 7 and 8 have been amended hereby in keeping with the description in the specification as well as the steps taken in following the flow chart of Fig. 6.

Accordingly, it is respectfully submitted that claims 7 and 8 as amended hereby are clear and definite in their recitation of the present invention and meet all requirements of 35 USC 112.

Reconsideration is respectfully requested of the rejection of claims 1 and 3 under 35 UC 103, as being unpatentable over Camp et al.

In paragraph 10. of the instant official action, claim 2 is objected to as being dependent upon a rejected base claim but would be allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claims.

Claim 1 has been amended hereby to include claim 2 in its entirety. Claim 2 has been cancelled.

Similarly, method claim 3 has been amended hereby to include method steps corresponding to the apparatus set forth in claim 2.

Therefore, by reason of the inclusion of the allowable subject matter in claims 1 and 3, it is respectfully submitted that claims 1 and 3 are patentably distinct over the cited reference.

Reconsideration is respectfully requested of the rejection of claims 7 and 8 under 35 USC 103, as being unpatentable over Van Phuoc et al. in view of Camp et al.

As explained in the present specification, according to the present invention a microcomputer determines whether the battery had been charged or discharged within a predetermined time period as counted by a timer. That is, it determines

whether the charge or discharge mode has been entered into by the battery. Upon a positive determination that such charge/discharge mode has, in fact, occurred within that measured time period the battery voltage is newly detected. Previously, a battery voltage has been designated as a remaining capacity value and stored in a memory. Following this new battery voltage detection, the remaining capacity value is read-out from the memory and compared with the newly detected voltage value. If the value read-out from the memory is greater than the newly detected battery voltage, then the newly detected battery voltage is declared an updated remaining capacity value and stored in the memory by overwriting the previously stored remaining capacity value.

Claims 7 and 8 have been amended hereby to emphasize the above-noted features of the present invention.

Van Phuoc et al. relates to a battery pack having an internal controller forming a so-called smart charger system. In Van Phuoc et al. the voltage detector detects the cell voltage and a microcomputer calculates a remaining battery capacity based on the remaining cell voltage. This is then stored in the system.

Camp et al. relates to a method and apparatus for determining the remaining time left in a mobile communication system and includes a system for determining the amount of time that the communication device has been in the standby mode and then projects a remaining battery life.

It is respectfully submitted that even combining Camp et

al. with Van Phuoc et al. that the feature of the present invention in which it is determined whether or not some action has taken place in the charge/discharge modes within a predetermined time, as determined by a timer, is not present in the combination of references as proposed by the examiner. All that Camp et al. teaches is that it is determined how long the phone has been in the standby mode and, thus, a projected amount of capacity is then diminished so that the remaining operational time is calculated.

Accordingly, by reason of the amendments made to claims 7 and 8 hereby, it is respectfully submitted that the method and apparatus for determining a remaining capacity for a battery, as taught by the present invention and as recited in the amended claims 7 and 8, is neither shown nor suggested in the cited references, alone or in combination.

Therefore, by reason of the amendments made to the claims hereby, as well as the above remarks, it is respectfully submitted that the present invention, as recited in the amended claims, is neither shown nor suggested in the cited references, alone or in combination.

Favorable reconsideration is earnestly solicited.

Respectfully submitted,

COOPER & DUNHAM LLP


Jay H. Maioli
Reg. No. 27, 213

JHM:gr